

# **OWNERS MANUAL LAZER RUNNER RF-LASER TAG SYSTEM**

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# SECTION 1

## INTRODUCTION & QUICK SETUP

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## **1. INTRODUCTION TO THE LAZER RUNNER LASER TAG SYSTEM**

The Lazer Runner RF-Laser Tag system is a state of the art player interactive amusement game. Players of the game are suited up with a Battle Vest. The players Battle Vest is comprised of a Phaser gun and a jacket type vest which has target areas that opposing players will shoot. Once a player has been outfitted with a Battle Vest, the game operator executes a game loading function with a Remote Control and the player enters the playing arena for an exciting interactive laser game experience.

The players use their Phaser to aim and shoot at opposing players in attempts to successfully hit the glowing targets of the opposing players. As the game progresses the game system computer is gathering information from each vest and interactive target that is involved in the game. The computer system can display the real time scores of the players while a game is in play.

The game system computer gathers and stores all who hit who player information. At the end of the game the final scores are downloaded to a printer which supplies each player with one copy of their game results. Each scorecard contains all the information the player needs to see who his major interacting opponents were. Many people have so much fun playing LAZER RUNNER that they keep coming back for more!

### **1.1 MAJOR COMPONENTS**

There are 7 major components to your RF-Lazer Runner System. Let us take a look at each of them and give you a brief description of their operation.

- Battle Station Arena
- Lazer Runner Computer System
- RF-Base Station
- RF-Battle Vest
- RF-Interactive Target
- Remote Loader
- Battery Charger - NiMH

#### **1.1.1 BATTLE STATION ARENA**

The Battle Station is a futuristic maze.....

#### **1.1.2 LAZER RUNNER COMPUTER SYSTEM (PART # 950/PCS001)**

The Lazer Runner Computer System is the heart of game management for the entire laser tag system. The Lazer Runner Computer System is responsible for the authorization of game requests from active vests and the subsequent scoring calculations for the active game. The Lazer Runner Computer system is outfitted with a touch screen monitor creating a user friendly interface for operators of the system.

The Lazer Runner Computer System utilizes a wired serial communications port to send and retrieve data from the RF-Base Station. The Lazer Runner Computer System is also connected via a parallel port to a high speed paper printer for the printing of player scorecards.

#### **1.1.3 RF-BASE STATION (PART # 905/BASESTAT001)**

The RF-Base Station is a transceiver that provides an RF interface for the Lazer Runner Computer System. The RF-Base Station enables the Lazer Runner Computer to transmit and receive messages from various RF devices of the laser tag system.

There is a wired serial communications port connection from the RF-Base Station to the Lazer Runner Computer System. The RF-Base Station performs the task of encoding and decoding RF data packets and then subsequently handling the RF transmission and reception from other RF devices in the system.

#### **1.1.4 RF-BATTLE VEST (PART # 960/BATUNIT06)**

The RF-Battle Vest is a major component of the system which players wear during the game. The RF-Battle Vest is packaged using standard military camouflage colors and is similar to putting on a jacket. A Phaser is attached to the Battle Vest via a cord and is used by the player to shoot laser light at opposing players. The Phaser also includes a display and an audio system to support visual and audio feedback to the player during the game.

The RF-Battle Vest is comprised of two basic elements as follows:

- Battle Vest - a vest with multi-color targets, backpack electronics, vest battery pack
- Phaser - a black laser gun attached to the vest backpack

The RF-Battle Vest can be put on similar to slipping into a jacket and then attaching the front vest clips. The Phaser is temporarily attached to the vest with the Phaser clip and the operator or player can disconnect the clip enabling the Phaser to be held in either hand by the player. Located at the rear of the vest on the backpack cover....

#### **1.1.5 RF-INTERACTIVE TARGET ( PART # 903/SENTRY001)**

The RF-Interactive Target is a major component of the system that players interact with during all game playing scenarios. Players in the game can score points by successfully de-activating an RF- Interactive Target and players loose points by being de-activated by the RF-Interactive Target.

The RF-Interactive Target can be configured to function in the game as a HomeBase or a Sentry Pod. The mode of operation for the target reflects on target / player interaction differently, regarding opponents and scoring, however the basic electronic functions of the target are identical. The RF-Interactive Target comprises three basic elements to facilitate laser tag game interaction and are listed as follows:

- IR Vest Detection/De-activation sub-system
- RF Transceiver sub-system
- LED Indication/Audio sub-system
- Peripheral Control (AC) sub-system

The IR Vest Detection/De-activation sub-system is constantly polling for the detection of a vest. When a vest has been detected and de-activation is authorized, the IR sub-system will emit a specific command to de-activate the detected Battle Vest. The de-activation is only realized if the Battle Vest is still within targeting range of the RF-Interactive Target.

The RF Transceiver sub-system functions as the complete RF link to the Lazer Runner Computer System/RF-Base Station. The RF Transceiver enables the transmission and reception of all data messages on the RF channel for the system.

The LED Indication/Audio sub-system provides the players with visual and audio feedback during the game playing experience. The visual and audio feedback is necessary for the players to understand and react to different functions of the RF-Interactive Target. The LED Indication/Audio sub-system supports all visual and audio feedback necessary such that the connection of peripheral components is not mandatory to realize all target functions.

The Peripheral Control (AC) sub-system is a connection of relays and AC receptacles within the RF-Interactive Target that is designed to switch the AC voltage 'on' and 'off' for the various peripheral components that may be plugged into the receptacles. The peripheral components controlled are intended to give larger and louder visual and audio effects to the players during the game playing experience. Peripherals such as specific color flood lights, strobe lights and audio sirens can be plugged into the AC controlled receptacles.

### 1.1.6 REMOTE LOADER (PART # 870/REMTLD3)

The Remote Loader is a major component for the system and is used by the operator of the game to request a game for an RF-Battle Vest. The operator need only to hold the Remote Loader at one of the targets of the Battle Vest and press the button once. The IR (Infra-Red) signal from the Remote Loader is received into the targeting sub-system of the RF-Battle Vest and subsequently the vest requests a game from the RF-Base Station.

### 1.1.7 BATTERY CHARGER - NiMH (PART # 870/CHRG2)

The Battery Charger - NiMH is a major component used by the operator to re-charge the battery contained within each RF-Battle Vest. The Battery Charger includes several charge cords enabling the operator to charge as many as 10 battle vests at one time. The re-chargeable Nickel Metal Hydride (NiMH) vest batteries in the system must be maintained properly and each port of the Battery Charger has a dedicated microprocessor based charging controller configured specifically for the NiMH vest batteries. Each port of the Battery Charger is capable of bulk charging or trickle charging a vest battery as required and all ports function completely independent of each other.

## 1.2 SYSTEM SETUP AND CONFIGURATION

The RF-Lazer Runner Laser Tag System is easy to setup and configure. So far we have talked about some of the major elements or devices used in the system. Lets look at these devices from another perspective to get an overall view of the entire system when completely connected for operation. The following diagram shows how the different devices react or interface with each other .

